

IN THE CLAIMS:

Please cancel claims 1-97.

Please add the following as new claims 98-173:

98. A method of treating tibial plateau compression fractures, comprising the steps of:  
accessing the space under the tibial plateau in a tibia between two generally opposed surfaces of the fractured tibia; and  
consecutively introducing a plurality of elements in contact with each other between the opposed surfaces to distract and support such surfaces to reduce the fracture and support the tibial plateau.
99. The method of claim 98, wherein said elements are introduced in contact with each other generally in the direction of the axis of the tibia.
100. The method of claim 98 wherein said elements are introduced by moving at least one element to a different position upon introduction of a subsequent element.
101. The method of claim 100 wherein said at least one element is moved by contacting a surface thereof with a surface of said subsequent element.
102. The method of claim 101 wherein the accessing step includes the step of placing an elongated access channel in communication with the space between said opposing surfaces and introducing the elements through said channel.
103. The method of claim 102, further including the step of providing a bone filler in contact with the elements.
104. The method of claim 101 wherein said elements are wafers, said wafers being introduced between said opposing surfaces by stacking one wafer atop another wafer.
105. The method of claim 98, further including the step of providing an outer member and introducing said elements into said member.
106. The method of claim 98, wherein said elements have arcuate contact surfaces.

107. The method of claim 98, wherein said elements have generally flat contact surfaces.
108. A method of treating tibial plateau compression fractures, comprising the steps of:
  - accessing the space under the tibial plateau on a tibia between two generally opposed surfaces of the fractured tibia; and
  - stacking a plurality of wafers in the tibia in the general direction of the axis of the tibia between the opposed surfaces to distract and support such surfaces to reduce the fracture and support the tibial plateau.
109. The method of claim 108, wherein said wafers are stacked by consecutively inserting said wafers one atop the other to form a column extending in the direction of the axis of the tibia.
110. The method of claim 109, wherein said wafers are consecutively inserted in a direction substantially normal to the axis of the tibia.
111. The method of claim 110, wherein said wafers are consecutively inserted by slidably moving one wafer along a surface of another wafer.
112. The method of claim 111, including the step of inserting between the opposing surfaces under the tibial plateau an elongated guide track along which the wafers travel during insertion.
113. The method of claim 112, including the step of inserting each wafer subsequent to the first wafer between the next preceding wafer and a base.
114. The method of claim 113, wherein the base is the guide track.
115. The method of claim 113, wherein the base is a wafer adjacent the next preceding wafer.
116. The method of claim 113, wherein the wafers have leading and trailing beveled ends, the method comprising the step of engaging the leading beveled end of one wafer with the

trailing beveled end of the next preceding wafer to enable the one wafer to be inserted between the guide track and the next preceding wafer to thereby urge the preceding wafer away from the guide track in the direction of the axis of the tibia.

117. The method of claim 109, including the step of providing the fluent bone filler in an access path to the tibial plateau and in contact with the wafer column.
118. The method of claim 117, wherein the access path is an opening through a tibial lateral wall, the method including the step of providing the filler in the lateral wall opening.
119. The method of claim 109, wherein the accessing step includes the step of inserting under the tibial plateau an elongated access channel through which said wafers are inserted.
120. The method of claim 112, wherein the accessing step includes the step of inserting under the tibial plateau an elongated access channel having collapsible and expandable configurations, the method including the steps of inserting the access channel in its collapsed configuration under the tibial plateau and then expanding the access channel between the opposing surfaces laterally of its length and in a direction generally normal to the direction of the axis of the tibia to enable the access channel to receive the guide track therewithin.
121. The method of claim 108 including the step of applying a liquid to the wafers.
122. The method of claim 121, wherein the liquid is a solvent carried in micro spheres to enhance bonding wherein the micro spheres are ruptured during insertion of the wafer.
123. The method of claim 122, wherein the micro spheres further include and osteoinductive agent.
124. The method of claim 108 including the step of applying a hardenable fluent material designed for time-delayed activation.
125. The method of claim 108, wherein said wafers are non-removably maintained in the tibia.

126. An apparatus for the reduction and stabilization of tibial plateau compression fractures, comprising a plurality of elements in cooperative contact forming a structure between said opposing surfaces under the tibial plateau generally extending in the direction of the axis of the tibia, said structure being formed by the consecutive receipt of said elements between said opposing surfaces.
127. The apparatus of claim 126, wherein each element has an interface, the interfaces of elements in contact being configured to provide said cooperative contact.
128. The apparatus of claim 127, wherein said interfaces are configured to provide unconstrained degrees of cooperative contact.
129. The apparatus of claim 127, wherein said interfaces are configured to provide semi-constrained selective degrees of cooperative contact.
130. The apparatus of claim 127, wherein said interfaces are configured to provide constrained degrees of cooperative contact.
131. The apparatus of claim 127, wherein said interfaces are arcuate.
132. The apparatus of claim 131, wherein said arcuate surfaces are generally cylindrical.
133. The apparatus of claim 131, wherein said arcuate surfaces are generally spherical.
134. The apparatus of claim 127, wherein said interfaces are generally flat.
135. The apparatus of claim 134, wherein said structure is defined by a plurality of wafers each having said generally flat interfaces, one wafer being disposed atop another wafer to form said structure.
136. An apparatus for the reduction and stabilization of tibial plateau compression fractures comprising a plurality of stackable wafers cooperatively forming a column generally in

the direction of the axis of the tibia between said two opposing surfaces under the tibial plateau, the wafers each having a contact surface, a contact surface of one wafer being slidably receivable on a contact surface of another wafer in a sliding direction generally normal to the axis of the tibia.

137. The apparatus according to claim 136, wherein a stackable wafer comprises a single wafer.
138. The apparatus according to claim 136, wherein a stackable wafer comprises multiple wafers.
139. The apparatus of claim 136, wherein one or more wafers are curved in a plane generally normal to the direction of the axis of the column.
140. The apparatus of claim 136, wherein one or more wafers are of non-uniform thickness.
141. The apparatus of claim 136, wherein each wafer has a length and a width and wherein one or more wafers increases in thickness along the wafer length such that the one or more wafers are configured as a wedge.
142. The apparatus of claim 136, wherein the wafer contact surfaces are provided with complementary configurations to restrain the wafers from slipping out of the column.
143. The apparatus of claim 142, wherein the complementary configurations are complementary ridges and grooves.
144. The apparatus of claim 143, wherein the complementary ridges and grooves have dovetail ridge and groove configurations.
145. The apparatus of claim 142, wherein the complementary configurations are configured to enable the wafers to rotate in a plane normal to the given direction while remaining in the column.

146. The apparatus of claim 142, wherein the complementary configurations comprise detent configurations so configured as to restrain any lateral movement between adjacent wafers in a column.
147. The apparatus of claim 142, wherein the complementary configurations comprise a cylindrical indent.
148. The apparatus of claim 142, wherein the complementary configurations comprise a spherical indent.
149. The apparatus of claim 142, wherein the wafer contact surfaces are configured to permit limited rotation of one wafer with respect to another wafer about an axis parallel to the sliding direction.
150. The apparatus of claim 136, wherein the wafers comprise a dovetail and a cylindrical indent to constrain all degrees of freedom.
151. The apparatus of claim 136, wherein the wafer contact surfaces have cylindrical interfaces to provide axial translation along the axis of the cylinder and rotational movement about the radius of the cylinder.
152. The apparatus of claim 136, wherein the wafers have spherical interfaces.
153. The apparatus of claim 136, further including a pin for locking the wafers in place.
154. The apparatus of claim 136, wherein each wafer has a leading edge, a trailing edge, and two lateral edges, the wafer further including a lip formed along a bottom surface for limiting axial travel of a subsequent wafer.
155. The apparatus of claim 154, wherein the lip extends along all edges of the bottom surface except for the trailing edge.

156. The apparatus of claim 154, wherein the lip extends along the leading edge of the bottom surface.
157. The apparatus of claim 154, wherein the lip extends along the lateral edges of the bottom surface.
158. The apparatus of claim 136, wherein the wafers are marked with a radio-opaque material for observation under fluoroscopy.
159. The apparatus of claim 136 wherein each wafer has a length and a width and wherein the wafer defining the bottom wafer in said column has a length larger than at least one other wafer in said column.
160. The apparatus of claim 136 wherein each wafer has a length and a width and wherein the wafer defining the top wafer in said column has a length larger than at least one other wafer in said column.
161. The apparatus of claim 160 wherein said wafer defining said bottom wafer in said column has a length larger than at least one other wafer in said column.
162. The apparatus of claim 136 wherein said wafers comprise implant materials.
163. The apparatus of claim 162, wherein one or more wafers have at least one orifice for receiving a filler material therein.
164. The apparatus of claim 162, wherein said wafers further comprise osteoinductive agents.
165. The apparatus of claim 162, wherein said wafers further comprise a drug therapy.
166. The apparatus of claim 136 further including an outer member covering at least a portion of such wafer column.
167. The apparatus of claim 166, wherein said outer member is permeable.

168. The apparatus of claim 167, wherein said outer permeable member comprises a material of macro-porosity.
169. A kit for the treatment of tibial plateau compression fractures, comprising;  
a plurality of wafer stacks of various thicknesses adapted to form a column between opposing surfaces under the tibial plateau of a tibia; and  
a wafer inserter for inserting said plurality of wafer stacks between said opposing surfaces, said wafer inserter being adapted to selectively insert consecutive wafer stacks of the same or different thicknesses between said opposing surfaces of the tibia to thereby form said column of wafers under the tibial plateau.
170. The kit of claim 169, wherein at least a number of said plurality of wafer stacks include only one wafer.
171. The kit of claim 169, wherein at least a number of said plurality of wafer stacks include more than one wafer.
172. A kit for the treatment of tibial plateau compression fractures, comprising;  
a plurality of elements adapted for contact with each other; and  
an inserter for consecutively inserting said plurality of elements between opposing surfaces in a tibia in a manner such that such elements are placed in contact with each other in a direction generally extending along the axis of the tibia.
173. The kit of claim 172 further including bone filler.